
3 Alignments and Adjustments

3-1 General Alignment Instruction

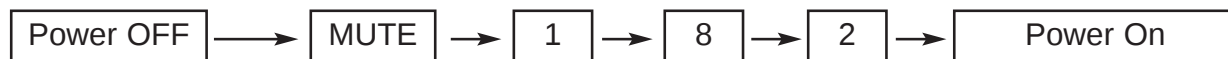
1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transformer.

3-2 Factory Mode Adjustments

3-2-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control



3-2-2 How to Access Service Mode

Using the Customer Remote

1. Turn the power off and set to stand-by mode
2. Press the remote buttons in this order; POWER OFF-MUTE-1-8-2-POWER ON to turn the set on.
3. The set turns on and enters service mode.
4. Press the Power button to exit and store data in memory.
 If you fail to enter service mode, repeat steps 1 and 2 above.
5. Initial SERVICE MODE DISPLAY State

1. Calibration	
2. Option Byte	
3. White Balance	
4. W/B Movie	T-JSMNAUS0-1000
5. Calibration Target	T-JSMNAUS5-1000
6. Calibration Value	ACL 28.16.4.1
7. MST3388	RFS T-JSMNAUS-061209
8. X242	2007-02-10
9. X242 NTSC	T-LEEUM-0377
10. FBE2	
11. Sound	
12. Dynamic Contrast	
13. Checksum 0x0000	
14. Reset	

6. Buttons operations withn Service Mode

KEY	FUNCTION
▲/▼	Item selection by moving the cursor
◀/▶	Data Increase/Decrease for the selected Item
MENU	Save set Data to EEPROM and go upper mode
DIGIT	Change channel
TV/VIDEO	Change AV mode

3-2-3 Factory Data

1.Calibration	
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	T-JSMNAUS0-1000
6.Calibration Value	T-JSMNAUS5-1000
7.MST3388	ACL 28.16.4.1
8.X242	RFS T-JSMNAUS-061209
9.X242 NTSC	2007-02-10
10.FBE2	T-LEEUM-0377
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

AV Calibration
Comp Calibration
PC Calibration
Hdmi Calibration

1.Calibration	
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	T-JSMNAUS0-1000
6.Calibration Value	T-JSMNAUS5-1000
7.MST3388	ACL 28.16.4.1
8.X242	RFS T-JSMNAUS-061209
9.X242 NTSC	2007-02-10
10.FBE2	T-LEEUM-0377
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

Factory Name	RF	DTV	AV/ SVIDEO	COMP	PC	HDMI
Caption Level	On					
Watchdog enable	On					
Spread Spectrum	1	1	0	0	1	0
Panel Option	26AU					
Dimming	EXT_PWM					
RS-232C	Debug					
Gamma	0					
Panel Display Time	XX Hr					
Mute Time[RF]	600mS					
CH Memory	SAMEX					
Shop Mode	OFF					
SUB MICOM DOWN	OFF					
MAIN EEPROM WP	OFF					
DDC WP	OFF					
PC Mode Ident	Auto					
HDMI Mode Ident	Auto					
HPD Ctl Method	1					
HPD Low Duration	900ms					
Download RRT	OFF					
7.5 IRE On/Off	On					
7.5 IRE Offset	60					
HDMI Mute Time	1500					

3 Alignments and Adjustments

1.Calibration	
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	T-JSMNAUS0-1000
6.Calibration Value	T-JSMNAUS5-1000
7.MST3388	ACL 28.16.4.1
8.X242	RFS T-JSMNAUS-061209
9.X242 NTSC	2007-02-10
10.FBE2	T-LEEUM-0377
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

Sub Brightness	128
R-Offset	512
G-Offset	512
B-Offset	512
Sub Contrast	128
R-Gain	512
G-Gain	512
B-Gain	512

1.Calibration	
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	T-JSMNAUS0-1000
6.Calibration Value	T-JSMNAUS5-1000
7.MST3388	ACL 28.16.4.1
8.X242	RFS T-JSMNAUS-061209
9.X242 NTSC	2007-02-10
10.FBE2	T-LEEUM-0377
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

W/B Movie On/Off	on	NOR_RGain	7
Mode	Dynamic	NOR_BGain	-11
Color Tone	Cool1	NOR_ROffset	-2
MSub Brightness	128	NOR_BOffset	2
MSub Contrast	128	C2_RGain	-32
W1_RGain	19	C2_BGain	22
W1_BGain	-26	C2_ROffset	5
W1_ROffset	-1	C2_BOffset	1
W1_BOffset	4	Movie Contrast	70
W2_RGain	49	Movie Bright	50
W2_BGain	-43	Movie Color	25
W2_ROffset	-4	Movie Sharpness	45
W2_BOffset	4		

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

1st_AV_Low	18	2nd_AV_High	235
1st_AV_High	220	2nd_AV_Delta	1
1st_AV_Delta	1	2nd_COMP_Low	1
1st_COMP_Low	16	2nd_COMP_High	235
1st_COMP_High	235	2nd_COMP_Delta	1
1st_COMP_Delta	1	2nd_PC_Low	1
1st_PC_Low	4	2nd_PC_High	235
1st_PC_High	235	2nd_PC_Delta	1
1st_PC_Delta	1	2nd_HDMI_Low	1
2nd_AV_Low	1	2nd_HDMI_High	235
		2nd_HDMI_Delta	1

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

LUMA_OFFSET	501
LUMA_GAIN	582
RED CUTOFF	-
GREEN CUTOFF	-
BLUE OFFSET	-
RED GAIN	-
GREEN GAIN	-
BLUE GAIN	-
2nd_X242_R_L	134
2nd_X242_G_L	134
2nd_X242_B_L	134
2nd_X242_R_H	1150
2nd_X242_G_H	1150
2nd_X242_B_H	1150

3 Alignments and Adjustments

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

RED CUTOFF	126	HSOPW	24
GREEN CUTOFF	93	SYNC_CTRL	64
BLUE CUTOFF	125	SOGMID_CTRL	189
PHASE_CC	0	SEP_THR	32
RED GAIN	200	PRECST	4
GREEN GAIN	200	POSTCST	14
BLUE GAIN	200	ADC_BW0	68
PLLDIV	858	ADC_BW1	4
PLL_GAIN	1	RDOFFSC	120
CLPDLY	8	GDOFFSC	0
CLPDUR	8	BDOFFSC	10

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

CH filter	ss_CH01
CV filter	Hardware
NR	ON
UVNR	OFF
LTI-YEE	ON
CTI-UVVE	ON
YH_MAX	128
YH_Edge	4096
YH_MIN	128
UVH_MAX	255
UVH_Edge	300
UVH_MIN	8
Color_Mid_Value	50

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

In Phase Line	24	CR_OFFSET	0
In Phase Frame	26	CB_GAIN	512
Out Phase Line	12	CB_OFFSET	0
Out Phase Frame	22	Y_DELAY_POS	0
CORING	2	Y_DELAY_NEG	12
LUMA_BW	0	CB_DELAY_POS	0
CHROMA_BW	4	CB_DELAY_NEG	13
CKILL_TH1	48	CR_DELAY_POS	0
CKILL_TH2	80	CR_DELAY_NEG	13
LUMA_GAIN	582	AGC_ON/OFF	OFF
LUNA_OFFSET	501	AGC_GAIN	538
CR_GAIN	512		

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

Patt-Sel	0	ACR-Th2	100
B-Slope gain	64	Skin-Enable	1
B-Tilt min	70	Skin-Tu	128
B-Tilt max	140	Skin-Tv	128
Lfunc-Basis	75	Sub color	128
Hfunc-Basis	88	M-Skin-Tu	128
Mean-Offset1	75	M-Skin-Tv	128
Mean-Offset2	150	M-Au-Sub color	128
Mean-Slope	41	MW-Skin-Tu	128
Input-offset	128	MW-Skin-Tv	128
ACR-Offset	30	M-Wi-Sub color	128
ACR-Th1	30		

3 Alignments and Adjustments

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

Carrier Mute	1
Stereo Pilot High	13
Stereo Pilot Low	7
Audio Delay	45
Spdif Delay	OFF
Melody Speak Vol.	5
Melody HP Vol.	5
NTP_Amp Vol.	30
NTP_PWM Mod.	243
NTP_DRC Thresh.	12
NTP_Speaker EQ	Off

1.Calibration	T-JSMNAUS0-1000 T-JSMNAUS5-1000 ACL 28.16.4.1 RFS T-JSMNAUS-061209 2007-02-10 T-LEEUM-0377
2.Option Byte	
3.White Balance	
4.W/B Movie	
5.Calibration Target	
6.Calibration Value	
7.MST3388	
8.X242	
9.X242 NTSC	
10.FBE2	
11.Sound	
12.Dynamic Contrast	
13.Checksum 0x0000	
14.Reset	

Dynamic CE	Off
Dynamic Dimming	Off
FBE2 Y_MEAN READ	Read Value

3-3 White Balance - Calibration

3-3-1 White Balance -Calibration

1. Calibration



1.AV
2.DTV Calibration
3.PC Calibration
(Calibration Condition refer to next page)
4.HDMI

3-3-2 White Balance - Adjustment

3. W/B



(low light)

(hight light)

Sub Bright
R offset
G offset
B offset

Sub Contrast
R gain
G gain
B gain

(W/B adjustment Condition refer next page)

3-3-3 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)

- INPUT SIGNAL GENERATOR : MSPG-925LTH

* Mode NO 1 : 744X484@60 Hz

NO 6 : 1280X720@60 Hz (Component 720P)

NO 21 : 1024X768@60 Hz

* Pattern NO 15 : Color bar

NO 16 : Toshiba ABL Pattern

NO 17 : 16 gray

2. Optical measuring device : CA210 (FL)

Please use the MSPG-925 LTH generator for model LNR2355W,LNR2755W,LNR3255W.

3-4 White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).
2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.
3. The optimal values for each mode are configured by default. (Refer to Table 1, 2.)

It varies with Panel's size and Specification.

- Equipment : CA-210
- Pattern: Master MIK K7256 #92 "ABL Pattern" as standard
 - Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min ↑
- Calibration and Manual setting for WB adjustment.



HDMI: No Calibration Manual adjustment at #16 pattern (720p)

COMP: Calibration at #24 Chessboard Pattern → Manual adjustment at #16 pattern (720p)

CVBS: Calibration at #24 Chessboard Pattern → Manual adjustment at #16 pattern (NTSC)

PC : Calibration at #24 Chessboard Pattern → No Manual adjustment (1024x768@60Hz)

-White Balance Manual Adjustment (ABL Pattern)

	CA-210				
		x	y	Y (cd/m ²)	T(K) ± MPCD
CVBS (NTSC) #1, #92	H/L	272	278	-	15000K/0
	L/L	272	278	4	15000K/0
COMP (720P) #6, #92	H/L	272	278	-	15000K/0
	L/L	272	278	4	15000K/0
DVI (720P) #6, #92	H/L	272	278	-	15000K/0
	L/L	272	278	4	15000K/0

-Adjustment Specification

White Balance : High light (± 3), Low light (± 5)

Luminance : High light (± 10%)

Low light (2.0fL ± 0.1fL, 2.1fL ± 0.2fL)

3-5 Servicing Information

3-5-1 USB Download Method

1.USB Download Method

- (1) Download the upgrade file in USB flash driver.
- (2) Extract the file. "T-SC37AUSC" folder will be appeared.
- (3) Turn on the LCD TV.
- (4) Insert the USB flash driver into the service jack of LCD TV and press the MENU button.
- (5) Place the cursor to SW Upgrade of Setup MENU.
- (6) Press the "ENTER" button.
- (7) "Scanning for USB..... It may take up to 30 seconds." will be appeared.
- (8) Press the "ENTER" button.
- (9) "Upgrading now... Please do not disconnect USB before upgrade is completed." will be appeared.
- (10) When upgrade is completed, the OSD says "Upgrade is completed. Power will be off 3 seconds from now and turned on automatically."

Memo